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30

has practical implications for understanding change interventions, e.g., individuals (likely also groups) who can intentionally explore this space of possible alignments are better positioned to shape their own habits

15

.

Scales
Frames
Structures
Levels
Norms (implicit & explicit)
Dynamic Habits & Routines
Micro-Iden
Meso-Iden
Macro-Iden
Material (things & places)
Social (people & practices)
Existential (meta-cognitive)
Goals and intentions,

authenticity,
purpose,
integrity, legacy,
moral clarity,
spiritual or
philosophical
alignment
Linguistic
Sensorimotor
Affective
Social
Belonging,
status,
recognition,
fairness,
reciprocity,
moral norms,
loyalty, role
expectations
Linguistic
Sensorimotor
Affective
Psych
Autonomy,
competence,
emotional
coherence, play,
stability of self
-
concept,
cognitive
dissonance
resolution
Linguistic
Sensorimotor
Affective
Biological
Survival,
homeostasis,
energy
regulation, sleep
needs, pain
avoidance,
sexual
drive,
safety

Linguistic
Sensorimotor
Affective
Table 1: The self
-
collective
This table outlines the nested, interdependent agents and elements that comprise the embodied subject
–
what we refer
to as the
self
-
collective
. It is organized along two key dimensions: spatial levels of organization (biological, psychological, social, existential) a
nd temporal
scales of activity (from immediate habits to enduring macro
-
identities). Each cell in the table reflects the expression
of embodied activity
–
sensorimotor,
affective, or linguistic
–
as it unfolds at a given level and timescale. These expressions are further shaped by three primary forms of constraint: norm
s
(what matters, or what motivates action), frames
(habitual sense
-
making repertoires), and structures (bodily, material, and social elements that enable
or limit action). Read horizontally, the table traces how activity is structured and maintained over time, from fleeting habi
ts to longer
-
term identity
e
nactments. Read vertically, it shows how embodied action is constrained and scaffolded at different levels of being. Together
, these dimensions capture
the complex ecology of sense
-
making within and across moments, highlighting how cognition is distributed

–
not just across brain, body, and
environment
–
but across timescales and shared social worlds. At any given moment, our experience and behavior emerge from a particular
constellation
within this matrix: a situated configuration of constraints that gives rise to affordances at different scales and their enac
tments, shaped by what matters,
what’s available, and what’s been historically reinforced.

2.2.4 Personal, Interpersonal, and Ecological Domains

As we’ve seen, behaviour change cannot be fully understood without a view of the embodied
subject as a multiscale, self
-
organising system
–
nested within and continuously interacting with

Here, shaping is a process of working with, not of mere imposition: we find and go with the grain of our behavior and environ
mental
opportunities, and remain sensitive to when we might be working against it.

broader structures of meaning and coordination. This raises a practical question: how might we
track and intervene within these layered dynamics in a way that remains both conceptually
rigorous and pragmatically useful? One promising resource comes from ad
jacent work in
organisational cognition
–
particularly the 3M model developed by Davide Secchi, Stephen J. Cowley, and colleagues (see Secchi & Gahrn
-
Andersen 2023). The 3M model distinguishes micro,
meso, and macro levels of interaction and offers a flexi
ble heuristic for understanding
coordination and change across organisational scales. While we draw inspiration from this triadic
framing, our use of it shifts significantly in both emphasis and function. Rather than mapping
structural levels, we introduce
what we call the

personal
,
interpersona
l, and
ecological
domains
–
each understood as a perspectival lense on relational activity.
These domains are not ontological levels. Instead, they offer ways of orienting attention to the
constraints, affordances and enactments that unfold across different relational contexts. Each
domain calls forth a particular set of concerns
–
relations to s
elf and embodiment, to others and
shared meaning, and to the other
-
than
-
human world and its rhythms. In this sense, the domains
are not just locations of activity, but loci of concern
–
each inviting specific forms of attunement
and responsibility. This fr
aming, we hope, helps clarify why we refer to this part of the framework as the
Relational Change Model
.
The personal domain brings into view how the shifting needs, habits, and embodied dynamics of
individual agents relate in convergent and divergent ways to express and satisfy norms that
originate at the various levels but manifest in the personal domain. H
ere we look for what needs,
goals and so on, are at play in a given territory, what habits or identities are influencing action,
how the environment is shaping possibilities for response, and what biological cues
–
such as
energy, hunger, or tension
–
the
body might be signaling. Many of the tensions associated with
the intention

–
action gap first emerge here, as localized disruptions in grip or self
-
consistency.
The interpersonal captures the domain in which individuals co
-
regulate, negotiate, and align with
one another. Here we might inquire into things like, what norms or frames others might bring to
a given situation, how they might be impeding or enabling my b ehaivour or shaping its
possibilities for change, what opportunities exist to engage others meaningfully, how one's own
actions are opening up or foreclosing relational possibilities, and so on. We might also be
interested, for instance, in how these dynam
ics manifest as spontaneous rhythms of turn
-
taking,
gesture, or gaze, or have stabilized as patterns that constitute shared roles or group identities.
The ecological domain draws attention to the broader webs of living and non
-
living systems within
which action unfolds, and which our ways of life depend upon or interact with, albeit at a remove
that tends to render them as opaque. Importantly, this is no t treated as a static background of
environmental constraints, but as a relational field in its own right
–
one that includes temporal
rhythms, material infrastructures, and ongoing relationships with plants, animals, weather
patterns, spaces, bioregions,
and the planet itself. In short, it is the relational domain that concerns our entanglement with the other
-
than
-
human world. Here we might ask what patterns
are part of this territory in which I am feeling the need for some change
–
such as a dog's morning
routine, or a plant's dormancy
–

and how might these rhythms shape what becomes possible or
what might be appropriate. We also ask how our own actions enable or suppress affordances for
32
other living beings
–
such as taking a dog to the beach or moving a plant into the sun
–
and what
responsibility we might have in relation to these.
Taken together, these domains serve as both descriptive and diagnostic tools. They help us track
how changes unfold across different relational territories, and where tensions or transformations
arise. From an intervention standpoint, they allow us to asse
ss how a given change interacts with
the norms, frames, and structures present in each domain, and thus better asses how our own
change might ripple out and shape the worlds of others too.
This model of domains complements the ontological levels introduced earlier
–
biological,
psychological, social, and existential. Where the levels describe the kinds of constraints at work
–
norms, frames and structures of various kinds
–
the domains allow
us to locate where those
constraints become meaningful and actionable when viewed the standpoint of sosmeone
attempting to make a change. In other words, levels give us a topology of influence; domains offer
us a landscape of enactment. While norms, frame
s, and structures operate across levels, they
become most legible in the domain view
–
where they show up as felt tensions, patterns, and shifts
that can be navigated and worked with for the purposes of shaping. These distinctions makes it
possible to pres
erve the richness of a multiscale perspective while offering a more tractable and
practitioner
-

relevant set of heuristics. Rather than attempting to model the totality of ontological influence, we can work with what becomes visible and actionable at the do main level. To make this architecture more tangible, we offer a set of visual depictions referred to collectively as the Relational Change Model (Figures 3a, 3b, and 3c). These figures show how constraints become organised and interact across domains and l evels to enable and limit affordances and enactments.

Figure 3a presents a top-down, radial diagram in which the personal, interpersonal, and ecological domains form the outermost ring. Within this ring are the three core constraint types – norms, frames, and structures – which shape action and experience in each domain. At the centre is a zone of affordances, emerging from the intersection of those constraints. And at the very centre are enactments – the situated sensorimotor, affective, and linguistic patterns through which change is made real. Figure 3b int roduces an existential layer that surrounds all others. This outer ring highlights that existential concerns are not peripheral but deeply implicated in how we interpret and engage with constraints. They shape what is noticed, what is resisted, and what is experienced as worthwhile or possible. Figure 3c offers a vertical perspective, revealing the other ontological levels – biological, psychological, social – that underpin the constraint dynamics above. Here we also see that the existential level crosses i nto this dimension of the model, highlighting how our capacity for self-reflection both reveals and connects all the elements in the model. In practice, different change contexts may benefit from foregrounding one mode

over the other, e.g., behaviour desig
n work may lean more on the horizontal domain view, whereas
persistent or complex difficulties may require deeper vertical inquiry.
Together, these figures articulate a layered account of the embodied subject as situated within,
and continuously remaking a landscape of constraints, affordances, and enactments, and the
33
perspectives from which we might view these relations
16
. Having now clarified the layered
organisation of the self
-
collective and its manifestation across relational domains, we are prepared to return to the coordination problems that underpin the intention
–
action gap, and to
consider how this enriched view re
frames what it means to intentionally enact change.
Figure 3a: The Relational Change Model
A concentric field diagram representing the interdependent constraints shaping situated organizational
action. The outermost ring depicts the three domains of the 3M model
–
Personal, Interpersonal, and Ecological. Within this, the constraint types
(struct
ures, frames, norms) are arranged. At the center is the zone of affordances, nested around a core of situated enactments.
Figure 3b:
A variation of Figure 3a, adding an existential ring that arcs over and intersects all other levels. This layer represents th
e
transversal influence of existential concerns
–
identity, coherence, and meaning
–
on how constraints are felt, negotiated, and ac
ted
upon.
16
We can also refine this architecture to explore how patterns of constraint give rise to distinct experiential fields, where a
ffordances
may be experienced as

soliciting
,
frustrated, ambiguous,
or
potentiated
(see Conditto & Stapleton 2024 for discussion of frustrated
affordances). But this is work for another time.
34
Figure 3c:
A vertical rendering of the same architecture, emphasizing its layered depth. The biological, psychological, and social
levels form the base of the structure, supporting the constraint field above, intersected by the existential level, through w
hich the
ar
ticulation of all else is possible.
3. Why is it Hard to Change? Coordination Challenges
In Table 1, we outlined the various elements that together comprise the self
-
collective. In Figure
4 below, we illustrate this network as a densely interconnected set of
elements evolving over time.
This depiction helps emphasize how our intentions manifes
t as a node/constraint in the network
in one space and time, yet aim to influence doings in different nodes,
situated elsewhere in space
and time. In this sense, the intention
-
action gap is quite literally a gap: a space filled with
numerous coordination c
hallenges that must be navigated
17
. Each of these challenge types and
sub
-
types, along with their potential responses, merit their own line of
theoretical and empirical
inquiry. Herein, however, it will suffice to outline the nature of each
problem and its implications
for the intention
-
ac
tion gap. We reserve our focus on responses for later sections and works.
We
introduce three broad types of coordination challenges: challenges of non

-
linearity, alignment,
and anticipation, each also entailing several subtypes. Clarifying these issues bri
ngs us a
significant step closer to understanding why behavior change is so challenging and provides
justification for why a theoretical approach rooted in embodied cognitive science can shed new
light on the topic.
17
Our inability to manage such gaps might be thought to reflect a kind of existential dyspraxia. Interesting, it is often obser
ved that
individuals with dyspraxia often have difficulties planning and coordinating their actions over time (see University of E
dinburgh, n.d.)
35
Figure 4. Coordination Challenges Over Time
This figure represents the evolving ecology of habits of a given self
-
collective,
illustrating how an intention manifests at a given node (T
1
 in orange) while its intended action is intended for a time and s
pace (T
6
,
in red) far removed from the original i
ntention. Alignment between these two events is significantly dependent on the one's ability to
address/relate to several coordination challenges that arise in such contexts.
3.1 Challenges of Non
-
Linearity
Problems of non
-
linearity primarily concern the unpredictability of complex adaptive systems
–
like the self
-
collective
–
arising from the dynamics of interactions between their parts. These dynamics are often characterized by processes of

self
-
organization
, where relatively simple
actions by individual components guided by basic rules, aggregate into complex patterns without
centralized control (Capra & Luisi 2014). Such self
-
organization allows for the integration of parts
across different levels. This is
seen, for example, in the coordinated movement of a murmuration
of starlings or the behavior of cells within a tissue (Theise 2023). But it is also present throughout
the self
-
collective, as nested systems composed of cells, tissues, organs, sensorimotor,
affective
and linguistic patterns, relationships, and social groupings of various kinds, all expressing their
own relative autonomy, but also coming together in coordinated ways to give rise to evermore
encompassing patterns.
In many cases, these patterns are understood to be
emergent
i.e., configurations that are
qualitatively different from their individual components and difficult to predict, even with full
knowledge of each component's activities (Lewes, 1875; Bar
-
Yam, 2004). The notion of
emergence is often encapsulated by the phr
ase
–
sometimes traced back to Aristotle
–
the whole
is more than the sum of its parts
. Emergent patterns, as well as being more/or other than the sum
of their parts, are also sometimes thought to exert top
-
down causation, where the whole (the
emergent pat
tern) constrains and shapes the activity of the parts (Bar
-
Yam, 2004). For instance,

when I act on my intentions, I influence the activity of my cells in ways that cannot be fully explained at the cellular level – there is some seeming top-down effect from my ‘intention’.

Emergence unfolds not only spatially but also temporally, as self-organizing processes evolve over time in open-ended ways (Crowther, 2022). A system’s history shapes its present behaviors, but new behaviors and trajectories can emerge unexpectedly. Complex systems are also more than the sum of their past.

As adaptive systems, these systems change in response to both environmental and internal stresses, sustaining or evolving their organization to meet systemic needs. This adaptability requires continually re-establishing structural interdependencies, or couplings, within the system and with external structures in the environment (Maturana & Varela, 1987; Varela et al. 1991). In human beings, this relates to the dynamics of homeostasis and allostatic, and the emergence of habits, identities, self-narratives and so on. The strength of these couplings shifts dynamically with changing conditions. Given these organizational features, several dynamic properties – non-stationarity, non-proportionality, non-additivity, and non-

ergodicity
–
become relevant when
engagi
ng with these systems and attempting to intervene to make changes
therein. We will briefly
consider each now in turn.
3.1.1 Non
-
stationarity
Non
-
stationarity
describes the dynamic and evolving nature of complex systems, in which the
properties and behaviors of both the system itself and the context in which it operates are
continuously shifting (Stanley & Lehman 2015; see also Heino et al., 2021, for a thoroug
h account
of how this and other non
-
linear dynamics affect behavioral change). More formally, a system is non
-
stationary if its probabilistic properties, including statistical moments (e.g., mean, variance)
and dependencies (e.g., correlati
ons between components) change over time. In non
-
stationary
contexts, when we act to address a problem, the problem itself may also change. In behavior
change terms, non
-
stationarity underscores that our norms, frames, and affordances do not
remain static,
and consequently, neither do the effects of any given intervention. This means that
strategies effective at one time or in a specific context may become ineffective in others, often in
ways that are challenging to predict. In short, what worked in the pas
t may not work in the future.
Recall the notion of adjacent possibles introduced earlier
–

when we act towards some set of possibilities, we sometimes open up new possibilities that could not have been foreseen in advance. Such variability highlights the need for adaptive, flexible and highly localized strategies of intervention that evolve with changing circumstances.

3.1.2 Non-ergodicity

Non-ergodicity means that a system's long-term behavior cannot be accurately predicted by its average state or past behaviors. In non-ergodic systems, individual trajectories or outcomes can vary widely, and time averages (the system's behavior over time) do not align with group averages, which are typically derived from snapshots of many individuals at a single point in time (Piccinini et al. 2016). While the system’s history contributes to its current trajectory, past behaviors do not reliably predict future ones. In a behavior change context, this implies that each person's behavioral patterns and change trajectories are unique (again, see Heino et al., 2021 for applications to behavior change). This challenges one-size-fits-all models for behavior change and questions the applicability of population-level insights to individual cases, even those with strong statistical significance (Olthof et al., 2023; Hayes & Hofmann 2020). In short, what worked for them may not work for you. Instead, as with the previous dynamic, it highlights the need for

personalized approaches that account for individual differences and adaptability in response to interventions over time.

37

3.1.3 Non-proportionality

The third sub-type, non-proportionality, indicates that changes in input do not produce directly proportional or linear changes in output (Isidori, 1995; Strogatz, 2014). In proportional systems, a given input reliably yields a predictable output, often in a fixed ratio, e.g., one-to-one. By contrast, in non-proportional dynamics, small inputs can lead to disproportionately large outputs, often in unpredictable ways, as seen with tipping points or phase transitions (Gladwell 2000). Conversely, large inputs may have minimal impact[18]. This pattern is familiar in efforts to change behavior. It may be the case, for instance, that a single conversation catalyzes a drastic 'sudden gain' in one's life, such as becoming a non-smoker (Tang & DeRubeis, 1999; Resnicow & Page, 2008). Or it might be that what felt like a huge amount of effort to change went nowhere, e.g., all the times one attempted to become a non-smoker prior to that but couldn't. In short, more is sometimes less, and less is sometimes more.

Of course, it is often likely that the sudden gains reflected a period of maturation, and thus, prior efforts were having some – even if unobserved and unexperienced – effects. Recognizing and anticipating non-proportional dynamics can increase our agency in relation to our own change, modulating our expectations in ways that serve our ambitions, and inviting us to inquire into more subtle shifts that offer insight into when persistence is likely to pay off, or when a change in strategy is warranted. Understanding these dynamics can also help us troubleshoot and interpret our progress with generosity, patience and grace, moving us away from a relationship of pure control, and into one of awareness and engaged letting-be, where we in a sense dance with or cultivate our change rather than trying to determine it or will it into being (De Jaegher 2019)[19].

3.1.4 Non-additivity

The final non-linear subtype is non-additivity, formally defined as a condition in which the combined effect of individual components differs from the simple sum of their separate effects (Tukey 1949; Lohmann 2014). Informally, this idea is captured in the phrase, already mentioned, the whole is other than the sum of its parts. In non-additive systems, the interactions between

components produce outcomes that cannot be predicted by merely adding the effects of each part in isolation. A classic example of non-additivity is a musical chord: the perceptual experience of harmony is not simply the addition of its individual notes but an emergent quality of their interaction. Another example is that there is no guarantee that a group of highly skilled individuals will function well together as a team. These effects are not just greater or lesser in magnitude than expected (non-proportionality), they are qualitatively different outcomes that emerge from the structure of interactions.[18] More formally, non-proportionality in complex systems is a condition where the system's output Y to an input X is non-linear and may involve feedback, sensitivity to initial conditions, threshold effects, or other mechanisms, resulting in unpredictable scaling where output magnitude and direction do not correspond directly to the input.[19]

Many efforts to change are in fact antithetical to the change we wish to make, e.g., if we are overly critical or shaming. But like with so much else as it relates to these dynamics, this is likely a set of highly individualized relations, e.g., some people might flourish under such conditions.[38]

In behavior change, non-additivity manifests in how interventions combine. An approach that targets multiple domains may yield effects far beyond what each element would achieve in isolation, or when simply added together. This is perhaps because the interaction between these

interventions reorganizes underlying regulatory patterns rather than merely adding up their separate contributions. If, for instance, we are attempting to bring about a sustainable change in our physical posture because of some discomf ort, we might intervene with some combination of physical movement training, narrative reframing, and environmental scaffolds. We might find, however, that beyond simply improving our posture, the interventions also induce a newfound sense of confidence, w hich alters social engagement and performance in professional settings.

This kind of interactive amplification is distinct from a simple cumulative effect. The posture change does not just "add" confidence; it may catalyze a deeper restructuring of embodie d self-perception that cascades into other domains.

Viewing interventions through a lens of non-additivity encourages us to think synergistically, targeting multiple domains and dynamics simultaneously to foster more holistic and sustainable change. Interestingly, evidence suggests that synergistic change i nterventions are also less prone to relapse (Rusk et al., 2018). When interventions address only a single level or scale, others may still be organized around remnants of the previous habit. In this case, the system can easily revert to the old pattern when conditions favor it. Patterns of substance abuse and addictio n are prime examples of such. By addressing multiple levels and scales in a synergistic way, we help reorganize the system more comprehensively, making it more resilient to regression and relapse.

This discussion also leads us to consider a broader class of effects known as spillover effects (or externalities), where behavioral changes in one domain unintentionally influence others (Elf et al., 2019). While spillover effects do not necessarily require non-

additivity, non-additive interactions often amplify or redirect them in unpredictable ways. For example, an intervention designed to promote exercise might also improve sleep and dietary choices, creating a positive feedback loop of reinforcing behaviors (e.g., Gil-Beltran et al., 2024). However, it is important to note that such effects are not inherently beneficial. Sometimes a well-intended intervention can produce unintended negative spillovers – the path to hell is not just paved with good intentions, but good actions too! The goal of the approach we advocate here is to identify, monitor, and carefully cultivate a diversity of positive spillovers, or ‘upward spirals’ that enhance the agency of the embodied subject within their specific environment. Finally, appreciating non-additivity also alerts us to the value of having access to a plurality of interventions with which we can experiment to see which combinations of interventions serve our efforts to change.

3.2 Challenges of Alignment

The second set of challenge types we emphasize are alignment challenges. When functioning well, the nested network of the self-collective enables both variability and coherence, supporting both openness to possibility and commitment to action across diverse environments (Hayes et al., 2011; Bruineberg et al., 2021). Alignment refers to the extent to which the nested systems that compose the self-collective are operating in concert across different levels, scales or domains, such that the behaviors expressed feel coherent and conducive to the needs and norms at play. When our habits are well

-
aligned with our surroundings and supply affordances we feel ready to
39
improvise within, we experience a sense of agency and being well
-
situated (James 2020)
20
. This
view is closely aligned with contemporary approaches in psychiatry that emphasize the multiscale
foundations of health and the importance of maintaining coherence across biological,
psychological, and sociocultural systems (Kirmayer, 2024). However, this diversity also
introduces challenges, especially in unfamiliar situations or when shifts within us or our
environments push us into contexts with which we have not previously attuned. This can lead to
various types of tensions within the self
-
collect
ive. On the one hand the relative autonomy of some
parts may take over to the point where we experience them as automatic and outside our control
and thus
obstructing
our path forward, leaving us feeling stuck. Such misalignments reduce our sense of agency
and, when significant and enduring enough, likely contribute to experiences we
commonly characterize as mental disorders (de Haan 2021; Nielsen 2023; Maiese 2023; Hipolito
et al. 2023).
On the other hand, our parts can be misaligned and pulling us in opposing directions, reflecting
underlying incompatible regulatory demands. Here moving confidently in any particular
direction won’t stick, and we may have the sense that the path ahead is obfuscated
(García, 2023;
Garcia & Arandia, 2022). Such examples are more common perhaps, and do not necessary lead
to psychological disorder. Nevertheless, they remain problematic for many people and can be a
significant source of disruption and dissatisfa

ction in our lives. Maiese (2022, p. 113/4) discusses
these kinds of tensions as underlying the experience of ambivalence, describing it in terms of
feeling
... powerless, unable to make decisions and move on with one's life. Lack of stability
thereby can result in volitional paralysis ... which undermines the flexibility of agency ...
there needs to be relative coherence among an agent's habits of behavior and atte
ntion,
and among the affective framings that constitute their enduring cares and commitments.
In such instances, the path forward is not necessarily obstructed by the presence of some sticky
or rigid pattern that one has trouble displacing but is rather obfuscated by a lack of coherence
within the self
-
collective relative to some aspect of the envi
ronment.
In sum, incompatible regulatory demands lead to conflicting and disorganized affects,
sensorimotor dynamics and narratives, and it becomes difficult to commit to or trust a given
trajectory and any particular set of affordances over longer timescales (see Scholler et al., 2021;
and Nguyen, 2022 for accounts of trust that accord closely with its usage here). From an embodied
standpoint, it may make sense to speak about the intention
-
action gap in terms of
frustrated
or
ambiguous affordances
, whereby one sens
es the possibilities for certain courses of action within
their environments, but struggles to realize them or settle on a sufficiently clear relation to them
(see Conditto & Stapleton 2024 for discussion of frustrated affordances in the context of the
20
Here we explore alignments within and between scales and levels, as this is richer conceptual territory that alignments betwe
en

agents interacting in different domains, where misalignments are best understood as felt tensions within the self, between th
e
self
and others or between the self and the other
-
than
-
human
-
world.

FIGURES:

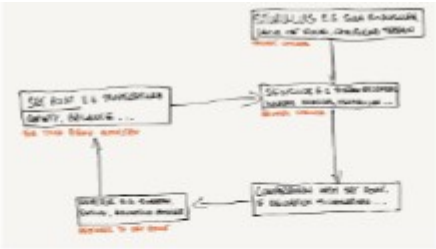

Figure 1a: Homeostatic Regulation Loop A system maintains stability by monitoring deviations from a set point and engaging corrective mechanisms. A stimulus (e.g., heat, lack of food, uneven slope) induces change, which is detected by sensory receptors. The system compares this input to a reference set point, and if a deviation is detected, effectors (e.g., sweating, eating, postural adjustment) are activated to restore equilibrium. This feedback loop underlies the body's capacity to regulate core functions in response to environmental and internal perturbations.

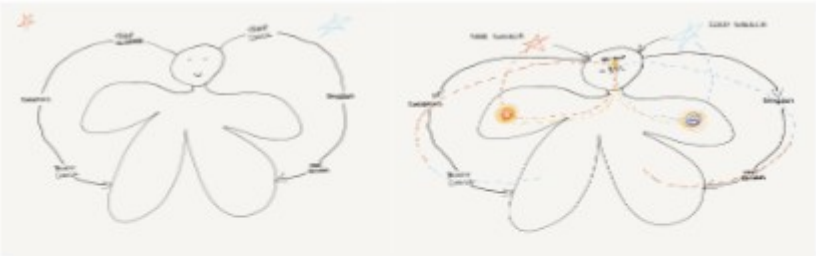

Figure 1b: Thermoregulatory Feedback Loops The first diagram illustrates a basic homeostatic loop for temperature regulation. As body temperature increases, sweating cools the body, restoring balance. Conversely, if temperature drops, shivering generates heat, bringing the system back to its set point. The second diagram introduces external thermal influences (heat and cold sources) and highlights how thermoregulation is not merely an internal process but is shaped by interactions with the environment. The pathways indicate how heat flows through the body, emphasizing dynamic exchanges between internal regulation and external conditions.

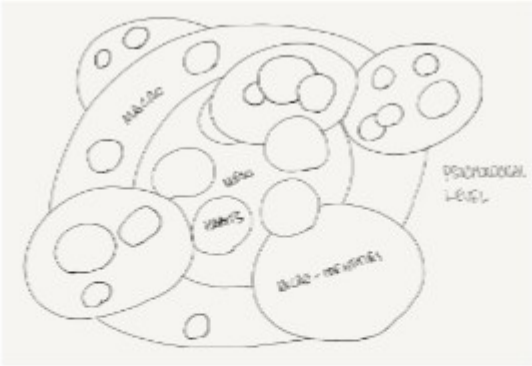

Figure 2. Nested Organization of Psychological Regulation This diagram represents the nested, multiscale organization of psychological regulation. Here we have 4 distinct levels of autonomous, albeit interdependent, organization. Habits, which unfold over the span of milliseconds to seconds, micro-identities, which are situationally attuned organizations of habits that span minutes to tens of minutes (e.g., eating lunch), meso-identities which link between related situations (e.g., me at work), and macro-identities (e.g., more enduring patterns that we might typically associate with personality traits). This embedded structure highlights how psychological regulation is distributed across scales, with stability and change emerging from interactions between levels. Importantly, this kind of nesting is true for other levels too e.g., biological (e.g., cells, tissues, organs, bodily systems), and social (e.g., shared habits, inter-identities, habitus)

				Scales					
				Frames				Structures	
Levels		**Norms** (implicit & explicit)	**Dynamic**	**Habits & Routines**	**Micro-Idem**	**Meso-Idem**	**Macro-Idem**	**Material** (things & places)	**Social** (people & practices)
Existential (metacognitive)		Goals and intentions, authenticity, purpose, integrity, legacy, moral clarity, spiritual or philosophical alignment	Linguistic						
			Sensorimotor						
			Affective						
	Social	Belonging, status, recognition, fairness, reciprocity, moral norms, loyalty, role expectations	Linguistic						
			Sensorimotor						
			Affective						
	Psych	Autonomy, competence, emotional coherence, grit, stability of self-concept, cognitive dissonance resolution	Linguistic						
			Sensorimotor						
			Affective						
	Biological	Survival, homeostasis, energy regulation, sleep needs, pain avoidance, sexual drive, safety	Linguistic						
			Sensorimotor						
			Affective						

Table 1: The self-collective This table outlines the nested, interdependent agents and elements that comprise the embodied subject – what we refer to as the *self*-collective. It is organized along two key dimensions: spatial levels of organization (biological, psychological, social, existential) and temporal scales of activity (from immediate habits to enduring macro-identities). Each cell in the table reflects the expression of embodied activity – sensorimotor, affective, or linguistic – as it unfolds at a given level and timescale. These expressions are further shaped by three primary forms of constraint: norms (what matters, or what motivates action), frames (habitual sense-making repertoires), and structures (bodily, material, and social elements that enable or limit action). Read horizontally, the table traces how activity is structured and maintained over time, from fleeting habits to longer-term identity enactments. Read vertically, it shows how embodied action is constrained and scaffolded at different levels of being. Together, these dimensions capture the complex ecology of sense-making within and across moments, highlighting how cognition is distributed – not just across brain, body, and environment – but across timescales and shared social worlds. At any given moment, our experience and behavior emerge from a particular constellation within this matrix: a situated configuration of constraints that gives rise to affordances at different scales and their enactments, shaped by what matters, what's available, and what's been historically reinforced.

Figure 3a: The Relational Change Model A concentric field diagram representing the interdependent constraints shaping situated organisational action. The outermost ring depicts the three domains of the 3M model – Personal, Interpersonal, and Ecological. Within this, the constraint types (structures, frames, norms) are arranged. At the center is the zone of affordances, nested around a core of situated enactments.

Figure 3b: A variation of Figure 3a, adding an existential ring that arcs over and intersects all other levels. This layer represents the transversal influence of existential concerns – identity, coherence, and meaning –on how constraints are felt, negotiated, and acted upon.

Figure 3c: A vertical rendering of the same architecture, emphasizing its layered depth. The biological, psychological, and social levels form the base of the structure, supporting the constraint field above, intersected by the existential level, through which the articulation of all else is possible.

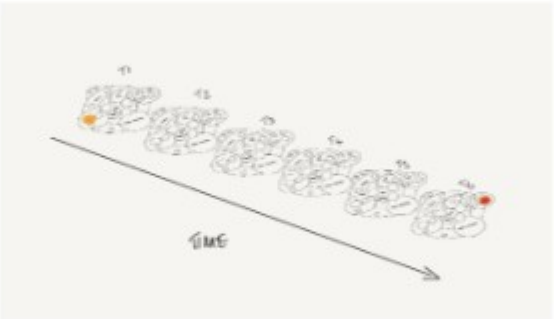

Figure 4. Coordination Challenges Over Time This figure represents the evolving ecology of habits of a given self-collective, illustrating how an intention manifests at a given node (T_1 in orange) while its intended action is intended for a time and space (T_4, in red) far removed from the original intention. Alignment between these two events is significantly dependent on the one's ability to address/relate to several coordination challenges that arise in such contexts.

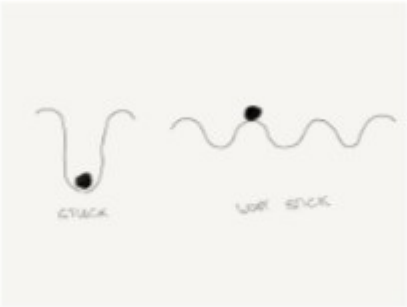

Figure 5. Alignment Challenges: Stuck, Won't Stick On the left (already shown above), 'stuck' represents a deeply ingrained, rigid state that resists or obstructs normal functioning, more typical in the context of mental health challenges and disorders. On the right, 'won't stick' represents an unstable state where changes fail to take hold due to insufficient anchoring in any particular trajectory, often resulting from conflicting regulatory demands or a lack of trust in a given direction.

Feature	What It Describes	How Trust Modulates It	What Happens When Trust is Low?
Indirectness	Lack of direct one-to-one coordination/communication	Trust allows actors to act without needing full transparency or immediate verification.	Mistrust leads to breakdowns in coordination due to lack of confidence in unseen processes.
Time Delays	Lags in feedback or adaptation	Trust enables sustained engagement despite delayed rewards, preventing premature pessimism.	Mistrust leads to short-termism, where people abandon efforts too early because they do not believe the delayed benefits will materialize.
Asynchrony	Different levels operating on different rhythms	Trust enables coordination across mismatched timescales (e.g., long-term policy, short-term individual behavior).	Mistrust makes out-of-sync changes feel like failures, causing premature corrections or disengagement.
Asymmetry	Some levels exert more constraint than others	Trust makes top-down constraints more tolerable and allows bottom-up adaptation to influence higher levels.	Mistrust creates resistance to authority or regulation and insensitivity to potentially important signals.

Table 2: Trust as a Meta-Regulatory Dynamic This table highlights the role of trust in modulating the various features of inter-level interaction, and the implications for how these lead to misalignments in the absence of trust.

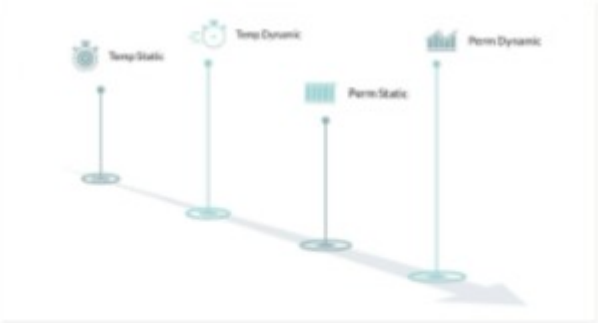

Figure 6. Temporal Classification of Scaffolds This figure depicts a continuum of scaffolds classified along two dimensions: temporal permanence (temporary vs. permanent) and staticity (static vs. dynamic). Temporary-static scaffolds (e.g., a table leg supporting a child) provide transient but stable support. Temporary-dynamic scaffolds (e.g., an adult guiding a child's steps) evolve in response to change. Permanent-static scaffolds (e.g., an abacus) offer enduring but fixed support, while permanent-dynamic scaffolds (e.g., a carer) continuously adapt to the learner's needs. This classification highlights how scaffolds vary in their ability to persist and respond to changing demands, influencing how learning and adaptation can be shaped over time.

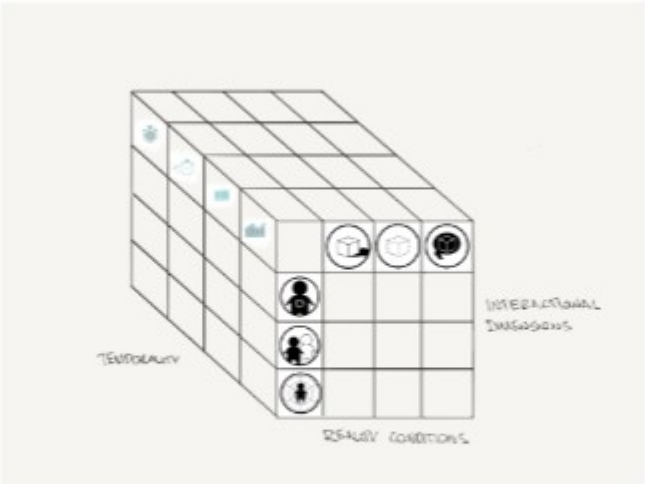

Figure 7. Mixed Reality Interaction Matrix (MRIM) for Scaffolds This figure represents the classification of scaffolds along three key axes: temporality (how scaffolds unfold over time), interactional dimensions (ranging from intrapersonal to extrapersonal interactions), and reality conditions (spanning imaginal, virtual, and physical domains). Adapted from Leader (2016; 2018) and James & Leader (2023), this classification highlights that variety of scaffolds we have available to us in any change effort and also emphasizes how scaffolds can function across multiple dimensions simultaneously, and/or be combined in productive ways. Future work will look at making these distinctions more workable for practitioners, perhaps using targeted questions.

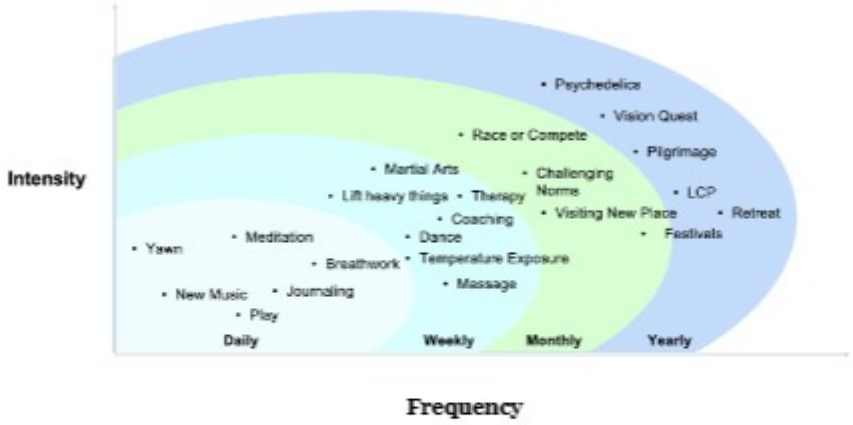

Figure 8. Shocks for Health and Well-Being This figure categorizes various interventions and experiences that serve as psychological shocks, organized by their intensity (vertical axis) and frequency (horizontal axis). These categorizations are broad and meant only to prime our intuitions about the value of different types of shocks. Lower-intensity, short-duration activities (e.g., yawning, journaling, listening to new music) provide frequent, subtle disruptions to habitual patterns. Medium-intensity, longer-duration activities, such as breathwork, martial arts, and therapy, occur on a weekly to monthly basis and facilitate deeper changes. High-intensity, long-duration experiences (e.g., vision quests, psychedelic experiences, retreats) represent rarer but more significant disruptions that can reshape identity and long-term psychological patterns. This highlights the role of strategically timed shocks and the importance of considering their dosage in supporting psychological adaptation and well-being.

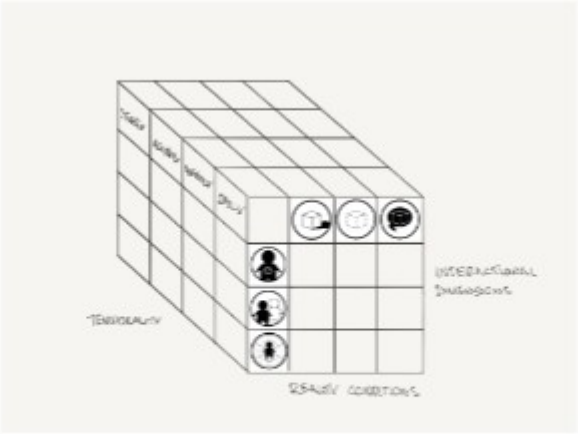

Figure 9. Mixed Reality Interaction Matrix (MRIM) for Shocks This figure adapts the MRIM framework to categorize shocks based on interactional dimensions (intrapersonal, interpersonal, extrapersonal), reality conditions (imaginal, virtual, physical), and a temporal axis that is slightly different than the scaffolding one, which emphasizes the frequency of occurrence (daily, weekly, monthly, yearly) rather than duration. While some shocks may last longer than others (e.g., a retreat spanning several days vs. a brief but intense ice bath), their impact is primarily defined by their intensity and frequency rather than their duration. For this reason, the diagonal axis represents frequency of occurrence rather than how long a given shock lasts.

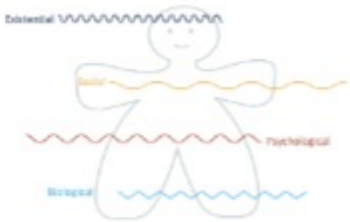

Figure 10a: Multiscale Alingments Dynamics at the bio-psycho-socio-existential levels, each expressing distinct rhythms, frequencies, and goal-directed activities, but nevertheless capable of achieving alignments akin to harmonic resonance.

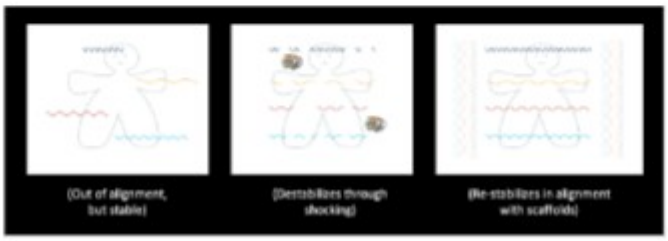

Figure 10b: Destabilizing and restabilizing with shocks and scaffolds This sequence illustrates a system that is out of alignment but stably so – such as someone caught in rigid, yet familiar, patterns of feeling, acting, or thinking, or someone who struggles to make something stick due to competing regulatory demands or conflicting goals. The middle image introduces a destabilizing shock, which initially increases incoherence but also expands the system's possibility space and opens new channels of communication across levels. In the final image, carefully attuned scaffolds support a realignment, disrupting stuck patterns and enabling greater trust and stability in a new orientation.

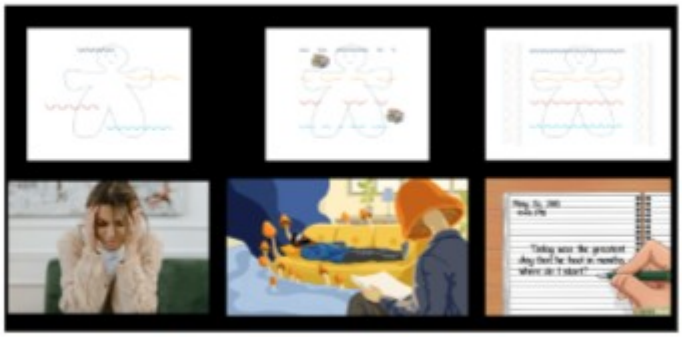

Figure 10c: Psychedelic Intervention This sequence revisits the model from Figure 10b, now grounded in a concrete case: a person undergoing a psychedelic-assisted intervention. The lower second image reflects the shock induced by the medicine, carefully scaffolded through set and setting. In the final image, we see how integration work draws on similar scaffolded supports to stabilize the new orientation.

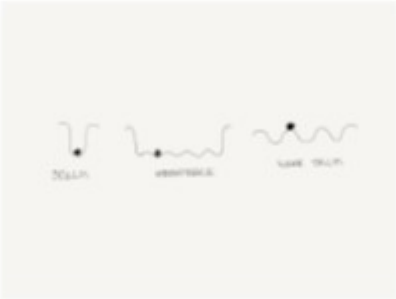

Figure 12. Stuck, Won't Stick, and Metastable This figure illustrates three key regulatory dynamics that shape agency and adaptability. On the left (already shown above), *stuck* represents a deeply ingrained, rigid state that resists or obstructs change. In the center, *metastable* depicts the state of autonomous agency, a system capable of shifting between states while retaining coherence. This allows for responsiveness to emerging challenges and opportunities while maintaining a trusted path of action. On the right, *won't stick* represents an unstable obfuscated state where changes fail to take hold due to insufficient anchoring in the desired trajectory, often resulting from conflicting regulatory demands or a lack of trust in a given direction. Navigating life's path requires balancing stability and change by sustaining a coherent sense of self while adapting to shifting conditions.

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Acknowledgements:
This work has evolved over several years, shaped along the way through collaboration with colleagues, clients, patients, and generous workshop participants –
too many to name individually. We are especially grateful to those who took part in workshops at t
he Okinawa

Institute of Science and Technology (OIST) and Manama Medical Center in Bahrain during the spring and summer of 2024, supported by the OIST Center for Innovation. Other workshops that provided valuable opportunities to share our ideas and receiv e feedback included: the Culture, Mind, and Brain seminar series (McGill University, Montreal), the Institue for Trasfomational

Leadership Network Conference (Georgetown), Musicity and Wonderfruit's Sound Camp (Pattaya, Thailand), the CHAIN Research Seminar (Hokkaido), the Leadership Circle Profile Study Group (online), the Foresight Activation Lab (University of Houston), the Futures Institute (Centro, Design, Cinema and Television, Mexico City), The Transnormal Institute, and the

inaugural cohort of our six-week Wayshaping Lab intensive. We especially want to thank Sharon Podobnik Peterson and the Center for Conscious Leadership for their endless support in developing the Wayshaping Lab. We also thank Ekaterina Sangati and Terezie Sedlinska for their feedback on early drafts of these ideas. Finally, our

deep gratitude goes to Jules Yim, Eleanor Snowden, Evan Thompson, Michelle Maiese, Laura Mojica, Fernando Rosas, Laurence Kirmayer, Mog Stapleton, Andrea Hiott, Mark Miller, Erik Rietveld, Julian Kiverstein, Giovanni Rabuffo, Michael Levin and the members of his lab, Laura de Molière, Abdulrahman Alsilaimi, Heba

Alhadyian, Niels Jansen at Ellery Studio Berlin, the guests of the ECogS 2022 and 2023 conferences and the Connectomics podcast, Fred Hasselman and all of the attendees at the Radboud Complexity Methods Summer School, and all the students and visitin g researchers at the Embodied Cognitive Science Unit over the past four years. Your insights, conversations, and

encouragement have left meaningful traces throughout this work. We thank you a